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MAR 12 2004

Serial No.: 09/827,570
Conf. No.: 5898

- 2 -

Art Unit: 1743

In the Specification

Applicant presents replacement paragraphs below indicating the changes with insertions indicated by underlining and deletions indicated by strikeouts and/or double bracketing.

Please replace the paragraph beginning at page 6, line 18 with the amended paragraph/line as follows:

As shown in Figures 1A-1D, a macro interface includes 96 glass (or other comparable material) capillary tubes 1 arrayed in a conventional 96 sample format, fixed in place relative to one another. A corresponding micro interface 11 includes 96 cartridges ~~1244~~ fixed in place relative to one another by a holder. A liquid sample reservoir 3 is positioned between each capillary tube and corresponding cartridge. The array may be arranged in any number of arrangements for yielding the desired number of tubes and cartridges. Such arrangements are illustrated in Figure 1D ~~20-22~~.

Please replace the paragraph beginning at page 7, line 1 with the amended paragraph/line as follows:

Figures 2A-B, illustrate enlarged views of a cartridge ~~2~~ 12 and a micro-electrical, mechanical system (MEMS) 4 positioned on one end of the cartridge. A liquid sample flows from the liquid handling substrate through the reservoir into a lower part of the cartridge. Applying a vacuum to orifice 23 forces liquid to enter the cartridge to "prime" the cartridge. Once the cartridge is primed, the liquid storage and dispensing substrate is inverted and both sides of the cartridge are sealed with an appropriate sealant to prevent evaporation, cross-contamination of the sample, and the introduction of particulate matter therein. A hydrophobic membrane 24 positioned adjacent the orifice 23 allows airflow into and out of the cartridge and prevents the liquid sample from being drawn out of the cartridge at the orifice 23.

Please replace the paragraph beginning at page 8, line 16 with the amended paragraph/line as follows:

As shown in Figure 4, a fountain geometry **13** of individual cartridges **12** are fed down through a set of tracks **30** arrayed across the assay substrate **31** in a spoke-like manner. Each of the tracks may house two belts **32** on either side of a horizontal portion of the track. Cartridges are drawn into the horizontal portion of the track via gravity and then conducted across the surface of the substrate by the two belts on either side. The bottom and tops of the tracks may include air bearings or a material **33** with a low coefficient of friction **[[33]]** to ease passage of the cartridges through the tracks. The tracks may also contain electrical conductors **17** that may run the length of the horizontal portion of the track or are split into discrete contact points. To dispense liquid, electrical energy is supplied to the electrical conductors **17** at an appropriate time when the cartridge **12** is positioned over a target. To ensure accurate positioning of the particular cartridge, the tracks may include one or more sensors **37** to detect registration marks **18** and one or more sensors **38** to detect indexing marks **19** provided on the cartridges. Sensors for chemistry detection **29** may also be used and may be positioned on the underside of the tracks or placed on rails between the tracks.